REMARKS

Claims 1-24 are pending. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Support for the amendments to the independent claims may be found at least on page 5, lines 19-22. The undersigned would like to thank the Examiner for the Examiner interview of June 9, 2004 and for an indication that the amended claims appear to overcome the primary reference, Brothers.

REJECTIONS

Claims 1-9, 11-15 and 17-24 are rejected under 35 U.S. Patent No. 6,128,026, Brothers III ("Brothers"). Claim 10 is rejected under 35 U.S.C. 103(a) based on U.S. Patent No. 6,128,026, Brothers III and in view of U.S. Patent No. 6,205,538, Hussain. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Brothers III

Brothers is directed to a double buffered graphic and video accelerator having a write blocking memory interface and method of doing the same. (Brothers, Title.) A write blocking accelerator provides maximum concurrency between a central processing unit (CPU) and the accelerator by allowing writes to the front buffer of a dual-buffered system. (Brothers, abstract lines 1-4.) As shown in FIG. 2, Brothers teaches a front buffer 230A and a back buffer 230B:

> The frame buffer 224 includes two buffers 230. At any given time, one of the buffers 230 acts as a front buffer 230A, while the other acts as a back buffer 230B. The front buffer 230A stores display data that is currently being displayed, while the back buffer 230B stores display data that is currently being rendered, or "under construction." As such, Brothers is therefore, limited to using two buffers for rendering. (Brothers ¶5, lines 30-36).

Claims 1, 8, 11, 13, 17, 21 and 23

As previously stated, Brothers is explicitly limited to using two memory buffers. As amended, all independent claims recite a single frame buffer. As such, Engstrom does not teach at least this element.

Brothers, therefore, solves the problem using two memory buffers rather than a single memory buffer. Further, Brothers teaches "the CPU typically generates a list of drawing commands that direct one or more engines to write within the back buffer, followed by a 'page flip' command" and telling the accelerator to switch the roles of the front and back buffers. As explicitly stated in the specification of Brothers and as explicitly shown in FIG. 2, Brothers is limited to using two memory buffers where the roles of the front and back buffers are switched via a page flip command. Unlike Brothers, the claims as amended all recite use of a single buffer.

One advantage provided by the claimed invention is that it is possible for a primitive, when received by the rendering engine, to be processed by the rendering engine and written into available locations of the frame buffer without the system having to be concerned with whether a sent rendering command can be currently displayed after the entire frame buffer is rasterized. (Specification, page 5, lines 12-17.) The claimed invention therefore solves the problem of utilizing the frame buffer and the rendering engine more efficiently than the prior art. (Specification, page 5, lines 18-19.)

Dependent Claim 10

According to the Office Action it would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the virtual memory environment taught by Hussain, in combination with the computer system taught by Brothers, in order to take advantage of operating a system in virtual memory that is larger than the physical memory of the system.

With regard to the assertion of the motivation of one skilled in the art to modify the system of Brothers, the Office Action fails to show where Brothers would teach, any advantage to "take advantage of operating a system in virtual memory that is larger than the physical memory of the system." Consequently, the Office Action fails to establish a prima facie case of obviousness.

According to Brother "the write blocking provided by the present invention maximizes parallelism between the CPU and the accelerator by shifting synchronization tasks from the CPU to the accelerator. Therefore, in contrast to the assertion in the Office Action that Brothers would seek to take advantage of operating a system in virtual memory that is larger than the physical memory of the system is not consistent with the goals sought by Brothers.

Dependent Claim 12

As to Claim 12, Applicants respectfully reassert the above comments and submit that this claim adds additional novel and nonobvious subject matter. According to the Office Action on page 5, Brother explicitly teaches [an] image primitive. Claim 12 explicitly recites "accessing a second portion of video/graphics data from the second portion of the single frame buffer for display on the display device after the step of prohibiting; and storing the second portion of the imaging primitive to the second portion of the single frame buffer after the step of accessing the second portion of the video/graphics data." Since the Office Action acknowledges that Brothers does not explicitly teach an image primitive, then Brothers does not similarly teach a second portion of the image primitive, and as such, the Office Action ignores explicit limitations in the claims. Further, because Claim 12 depends on Claim 11, Claim 12 is allowable for at least the reasons Claim 11 is allowable.

Claims 13, 14, 15, 17-24

Claims 13, 14, 15, 17-24 stand rejected based on the same rationale as that given for claim 1. Applicants respectfully reassert at least the relevant remarks made above with respect to

claim 1. Accordingly, Applicants further submit that Claims 13, 14, 15, 17-24 add additional novel and nonobvious subject matter, and are allowable as at least depending from an allowable base claim.

CONCLUSION

Applicants respectfully submit that the claims are in condition for allowance, and an early Notice of Allowance is earnestly solicited. The Examiner is invited to telephone the below-listed attorney at 312-609-7970 if the Examiner believes that a telephone conference will expedite the prosecution of the application.

Dated: June 25, 2004

Respectfully submitted,

By: _____
Themi Anagnos
Registration No. 47,388

Vedder, Price, Kaufman & Kammholz, P.C.
222 N. LaSalle Street
Suite 2600
Chicago, Illinois 60601-1003
Phone: (312) 609-7970
Facsimile: (312) 609-5005